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| EXAMINER | |
|---|---|
| LE, MIRANDA | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/737,109 | WANG, JIANXIN | |
| | Examiner | Art Unit | |
| | MIRANDA LE | 2159 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *02 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) *34* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/05/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Election/Restrictions*

During a telephone conversation with Applicant's representative, Chad D. Terrell on 06/25/09, a provisional election was made without traverse to prosecute the invention of claims 1-33. Affirmation of this election must be made by applicant in responding to this Office action. Claim34 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

This communication is responsive to Amendment, filed 04/02/09.

Claims 1-33 are pending in this application. This action is made non-Final due to an oversight on the examiner's part that reference Tamura should have indicated in the previous office action instead of reference Dunham.

### *Information Disclosure Statement*

The information disclosure statement filed 02/05/09 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The

information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless:
>
> (e) the invention was described in
>
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or
>
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1-5, 13-17, 25, 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Tamura et al. (US Patent No. 6,728,848).**

Tamura anticipated independent claims 1, 13, 25 by the following:

**As to claims 1, 13, 25**, Tamura teaches a serverless backup system for backing up information on a network including one or more servers *(i.e. Servers, See Fig. 8)*, comprising:

a storage system *(i.e. disk 226, Fig. 2)* for storing information to be backed up and restored, the storage system operable to:

receive the information *(i.e. a method for a storage system of backing up the storage system's data according to an extended copy instruction*

*received from a host computer, the method includes; responsive to the extended copy instruction creating a bitmap table stored in memory; concurrently polling the memory by a plurality of concurrently running processors; when a processor of the plurality of concurrently running processors is in the bitmap table, connecting to a backup device in a storage area network; when the connecting is successful backing up the storage system's data to the backup device, col. 3, lines 4-15)* from a plurality of workstations *(i.e. host computer, col. 3, lines 4-15)*; and

store the information received from the plurality of workstations *(i.e. a method, a system and code for backing up information on a storage system, for example, a disk system, connected to a storage area network. The host or server system off loads the task of backing up its data to the storage system that stores the data. In an exemplary embodiment a server sends an E-Copy command to a copy manager on a disk system. Next, the copy manager finds an available back-device, for example a tape or DLT library, and then backups the information indicated in the E-Copy command to the back-up device. A user interface is provided so that one or more path groups, comprising at least a target port and an initiator port, on a disk system may be designated, col. 2, lines 10-25)*; and

a backup storage system *(i.e. Backup Device 232, Fig. 2)* for backing up the information and restoring the information, the backup storage system coupled to the storage system and to one or more servers *(i.e. Servers, See Fig. 8)* via a network, the backup storage system operable to:

obtain a static view of a relevant portion of the storage system *(i.e. The E-copy command starts the execution of target JOB 816 on microprocessor 814. Target JOB 816, using the parameter list of the E-copy command, then places in shared memory (SM) 820 a bitmap table 818 indicating which microprocessors may be used to execute the E-copy command, col. 8, lines 4-44)*;

map one or more blocks of data comprising the information being backed up to corresponding files *(i.e. The microprocessor 830 through the port B 840 then searches 850 for tape device port 880, col. 8, lines 4-44);* and

back up the information by transferring the information being backed up using one or more data movers *(i.e. microprocessor 832, col. 8, lines 4-44)* operable to transfer the information *(i.e. The microprocessor 832 then executes the data transfer 852 from the logical unit in the disk system 805 through initiator port C 842 to tape device port 880, col. 8, lines 4-44)* being backed up directly from the storage system to the backup storage system, using one or more extended copy commands, without going through the one or more servers *(i.e. Another embodiment provides a method for a storage system of backing up the storage system's data according to an extended copy instruction received from a host computer, the method includes; responsive to the extended copy instruction creating a bitmap table stored in memory; concurrently polling the memory by a plurality of concurrently running processors; when a processor of the plurality of concurrently running processors is in the bitmap table, connecting to a backup device in a storage area network; when the connecting is*

*successful backing up the storage system's data to the backup device, col. 3, lines 4-15)*; and

restore the information by transferring the information being restored using one or more data movers operable to transfer the information being restored directly from the backup storage system to the storage system, using one or more extended copy command *(i.e. E-COPY COMMAND, See Fig. 2)*, without going through the one or more servers *(i.e. Server, Fig. 2)*.

**As to claims 2, 14**, Tamura teaches the backup storage system comprises a tape storage system *(i.e. a tape or DLT library, col. 2, lines 10-25)*.

**As to claims 3, 15**, Tamura teaches the storage system comprises a disk storage system *(i.e. The present invention provides a method, a system and code for backing up information on a storage system, for example, a disk system, connected to a storage area network, col. 2, lines 10-25)*.

**As to claims 4, 16**, Tamura teaches the backup storage system comprises a storage area network *(i.e. The storage system is coupled with the plurality of backup systems via a storage area network (SAN). The method includes the storage system receiving a command to copy the information, from the server. Next, the storage system finds an available backup system; and under control of the storage system, the information is copied to the available backup system, col. 2, lines 25-35)*.

**As to claims 5, 17, 26**, Tamura teaches the information is transferred between the backup storage system and the storage system using Extended Copy command *(i.e. The present invention provides a method, a system and code for backing up information on a storage system, for example, a disk system, connected to a storage area network. The host or server system off loads the task of backing up its data to the storage system that stores the data. In an exemplary embodiment a server sends an E-Copy command to a copy manager on a disk system. Next, the copy manager finds an available back-device, for example a tape or DLT library, and then backups the information indicated in the E-Copy command to the back-up device. A user interface is provided so that one or more path groups, comprising at least a target port and an initiator port, on a disk system may be designated, col. 2, lines 10-25)*.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is

advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 6, 7, 18, 19, 27, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (US Patent No. 6,728,848), as applied to claims above, in view of West et al. (US Patent No. 6,446,175).**

**As to claim 6, 18, 27**, Tamura does not specifically teach the system as recited in Claim 1, wherein prior to transferring information directly from the storage system to the backup storage system, a snapshot of the storage system is taken

West teaches this limitation *(i.e. as shown in FIG. 5, a snap volume 154 is used to reduce the impact on the remote host system 128. That is, snap volume 154 is used as temporary or bridge volume, established in the manner described above with respect to FIG. 1, so the host 128 may access the secondary temporary volumes 150 as necessary. The snap processes for snap volumes 154 is represented by arrows 158 and bit map structures 160 and 162 can be used to facilitate partial volume restoration or snapping procedures based on bit map information. Moreover, a primary temporary volume 156 may be established to receive the point-in-time copy information as shown in FIG. 5. The data transfer is handled in the same manner as the data transfers from the primary to the secondary during normal backup, however, the data is transmitted in the*

*opposite direction using link 119 to the temporary volume 156. The secondary system 104 is the transmitting system and the primary system 102 is the receiving system. Each controller 110 and 116 is configured to both send and receive data information along links 118 and 119, col. 15, lines 10-30)*.

It would have been obvious to one of ordinary skill of the art having the teaching of Tamura and West at the time the invention was made to modify the system of Tamura to include the limitations as taught by West. One of ordinary skill in the art would be motivated to make this combination in order to receive the point-in-time copy information in view of West (col. 15, lines 10-30), as doing so would give the added benefit of reducing the impact on the remote host system as taught by West (col. 15, lines 10-30).

**As to claims 7, 19, 28**, Tamura teaches a period of write inactivity to the storage system is waited *(i.e. waits for the next bitmap table to be placed in the shared memory by another target JOB, col. 9, lines 6-55)*.

West teaches taking the snapshot *(i.e. Alternatively, and as shown in FIG. 5, a snap volume 154 is used to reduce the impact on the remote host system 128. That is, snap volume 154 is used as temporary or bridge volume, established in the manner described above with respect to FIG. 1, so the host 128 may access the secondary temporary volumes 150 as necessary. The snap processes for snap volumes 154 is represented by arrows 158 and bit map structures 160 and 162 can be used to facilitate partial volume restoration or snapping procedures based on bit map information, col. 15, lines 10-30)*.

**Claims 8, 9, 20, 21, 29, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (US Patent No. 6,728,848), in view of West et al. (US Patent No. 6,446,175), as applied to claims above, and further in view of Gold et al. (US Patent No. 6,785,786).**

**As to claims 8, 20, 29**, Tamura, West do not specifically teach the period of write inactivity is a predefined period of time.

Gold teaches this limitation *(i.e. if the time is set to 5 seconds, col. 5, lines 55-67*).

It would have been obvious to one of ordinary skill of the art having the teaching of Tamura, West, and Gold at the time the invention was made to modify the system of Tamura, West to include the limitations as taught by Gold. One of ordinary skill in the art would be motivated to make this combination in order to determine when a file is safe to backup in view of Gold (col. 5, lines 54-67), as doing so would give the added benefit of having a data restore operation enacted that uses data stored in primary storage, without needing to find and install any particular backup tape (col. 2, lines 9-14) as taught by Gold.

**As to claims 9, 21, 30**, Tamura, West, Gold do not specifically teach the predefined period of time is three seconds.

However, Gold teaches "*if the time is set to 5 seconds" (col. 5, lines 54-67)*.

It would have been obvious to one ordinary skill of the art having the teaching of Tamura, West, and Gold at the time the invention was made to set

the predefined period of time of Gold to three seconds in order to determine when a file is safe to backup as taught by Gold (col. 5, lines 55-67), as doing so would give the added benefit of having a data restore operation enacted that uses data stored in primary storage, without needing to find and install any particular backup tape (col. 2, lines 9-14) as taught by Gold.

**Claims 10-12, 22-24, 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (US Patent No. 6,728,848), in view of West et al. (US Patent No. 6,446,175), as applied to claims above, and further in view of Blam et al. (US Patent No. 6,738,923).**

**As to claims 10, 22, 31**, Tamura, West do not specifically teach if the period of write inactivity does not occur by time a timeout period has expired, the transfer fails.

However, Blam teaches this limitation as a timeout period *(col. 4, line 65 to col. 5, line 27)*.

It would have been obvious to one of ordinary skill of the art having the teaching of Tamura, West, and Blam at the time the invention was made to modify the system of Tamura, West to include the limitations as taught by Blam. One of ordinary skill in the art would be motivated to make this combination in order to access and boot from the next backup server in the network (col. 5, lines 15-27) in view of Blam, as doing so would give the added benefit of efficiently adjusting time-outs and failover intervals according to the requirements of different systems (col. 1, line 65 to col. 2, line 3) as taught by Blam.

**As to claims 11, 23, 32**, Blam teaches the timeout period is a predefined period of time *(col. 4, line 65 to col. 5, line 27).*

**As to claims 12, 24, 33**, Tamura, West, Blam do not seem to explicitly teach the predefined period of time is 80 seconds.

However, Blam teaches *"a method of adjusting failover intervals" (col. 5, lines 59-67).*

It would have been obvious to one ordinary skill of the art having the teaching of Tamura, West, Blam at the time the invention was made to use the method of Blame to adjust the predefined period of time is 80 seconds in order to access and boot from the next backup server in the network as taught by Blam (col. 5, lines 15-27), as doing so would give the added benefit of better adjusting time-outs and failover intervals according to the requirements of different systems (col. 1, line 65 to col. 2, line 3) as taught by Blam.

## ***Response to Arguments***

Applicant's arguments with respect to claims 1-33 have been considered but are moot in view of the new ground(s) of rejection. The corrected office action herein above further details how reference Tamura reads on the claimed limitations.

## ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James K. Trujillo, can be reached at (571) 272-3677. The fax number to this Art Unit is (571)-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Miranda Le/
Primary Examiner, Art Unit 2159